SWITCHED SPECIAL SERVICES
CIRCUIT ORDER AND TRUNK ORDER TRANSMISSION TESTS
FOR SPECIAL SERVICES
HAVING ACCESS TO THE DIRECT DISTANCE DIALING NETWORK

1. GENERAL

1.01 This section outlines the circuit order and trunk order transmission tests that should be made on switched special services that have access to the Direct Distance Dialing (DDD) network. The tests should be made before the circuits are placed in service.

1.02 This section is reissued to remove reference to tie trunks, to add information regarding switched special services, and to update section references in Chart A. Since this is a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 References to tie trunks have been removed from this section because they are now covered in Section 311-300-500.

1.04 The Common Language Circuit Identification Codes of Section 795-402-100 are covered in this section and described in the following subparagraphs:

(a) ***Automatic Call Distributor (ACD):*** A switching system designed to distribute a large volume of incoming calls to a group of attendants in the approximate order in which the calls were received. ACD lines (TU) and ACD trunks (TR) are commonly used by airlines, retail stores, and others for handling order and information types of calls.

(b) ***Dial PBX:*** A switching system located on the customer's premises in which the connections between two stations or outgoing calls from stations to trunks may be machine-switched under control of the PBX station dial. Incoming calls from central office trunks are received by the PBX attendant who extends them to the desired station via a cord switchboard or a console.

(c) ***Foreign Exchange Line (FL):*** Provides service between a telephone or a data set at a customer's location and a distant central office that would not normally serve that customer's location.

(d) ***Local PBX Trunk (TK):*** Provides a connection from a PBX at a customer's premises to a central office that normally serves the PBX location.

(e) ***Long Distance Terminal Trunk (LT):*** Provides a direct connection from a PBX at a customer's location to a toll switchboard.

(f) ***Manual PBX:*** A switching system located on the customer's premises in which all connections, whether between two stations or between stations and trunks, are made by a PBX attendant at one or more cord switchboards or cordless consoles.

(g) ***Off-Premises Extension (OP):*** Located at a point that is distant from the main station location. Bridge lifters may be required to reduce excessive bridging losses.

(h) ***PBX Foreign Exchange Trunks (FT):*** Provide service between a PBX or ACD at a customer's location and a remote central office that would not normally serve that customer's location.

(i) ***PBX Off-Premises Station Line (OS):*** Provides service between a PBX and a PBX station when the PBX station is located at some distance from the PBX.

(j) ***Secretarial Service (SL):*** Provides telephone answering service when a customer is not available to answer calls. Lines similar to off-premises extension lines connect the customer's line to the secretarial service location and usually

terminate in a secretarial service switchboard. Here also, bridge lifters may be required to reduce excessive bridging losses.

(k) ***Wide Area Telecommunication Service (WATS):*** WATS circuits are described below:

(1) ***WATS Line (IN) (WX):*** Connects a station to a WATS central office. IN WATS lines are used exclusively for incoming, bulk-rate calls from specified areas to the station.

(2) ***WATS Line (OUT) (WO):*** Connects a station to a WATS central office. OUT WATS lines are used exclusively for outgoing, bulk-rate calls from the station to specified areas.

(3) ***WATS Trunk (IN) (WI):*** Provides a connection from a PBX to a WATS central office. IN WATS trunks provide inward, bulk-rate, one-way calling from specified areas to the PBX.

(4) ***WATS Trunk (OUT) (WS):*** Provides a connection from a PBX to a WATS central office. OUT WATS trunks provide outward, bulk-rate, one-way calling to specified areas from the PBX.

1.05 The circuit order and trunk order tests are based on the following objectives: A switched special service that is lined up properly and adjusted to its expected measured loss (EML) will retain its adjustment for a long time, will give better service, and will require less routine care.

1.06 Chart A contains an orderly progression of the type of tests that are required, including "What To Do," "How To Do It," and "Requirements To Be Met." They also cite references to other practices for detailed "How To Do It" procedures.

2. RESPONSIBILITY

2.01 The designated control office has the general responsibility of having the trunk or line meet service requirements before placing it in service. This responsibility includes verifying the completion of tests and adjustments made at other locations as well as those made at the control office.

2.02 Office responsibilities for circuits made up of toll facilities are outlined in other sections (660-201-010 is typical).

3. DATA-PHONE® SERVICES

3.01 In addition to the references made in this section, circuits used for DATA-PHONE services should meet the requirements of the appropriate DATA-PHONE sections (Sections 314-205-500 and 314-205-501).

4. TRANSMISSION TEST CHECK LIST

4.01 A convenient method of following the progress and verifying the completion of trunk and circuit order tests is with the use of a check list. Such a list should be made up locally to best satisfy the needs of the location in which it is to be used. An example of a form to serve this purpose is shown on Page 3 of this section.

SPECIAL SERVICE TRUNK, CIRCUIT, OR SERVICE ORDER TRANSMISSION TEST CHECK SHEET

ORDER NO._____ DUE DATE_____ DATE COMPLETED_____

TRUNK/LINE_____

TYPE OF TEST (BSP SECTION 311-100-500)	WORK PERFORMED										TEST COMP.		REMARKS
	*MAKE	DATE	HOURS	BY	DATE	HOURS	BY	DATE	HOURS	BY	DATE	BY	
DC Tests													
Repeater tests and repeater gains													
Singing and echo return loss tests (SRL and ERL)													
Single-frequency signaling circuits													
Pulsing tests (General)													
Pulsing tests (for FX and WATS circuits)													
Carrier telephone systems													
Carrier telephone systems — channel net gain													
Overall 1000-Hz measurement													
Frequency response													
Message circuit noise test													
Operational tests													
Talking and listening													
Completion referred to control office													
Placed in service													

*Place a check (√) in the MAKE column opposite each applicable test to be performed.

CHART A

LOCAL PBX TRUNKS	PBX OFF-PREMISES STATION LINES	FOREIGN EXCHANGE LINES	PBX FOREIGN EXCHANGE TRUNKS	LONG DISTANCE TRUNKS	OFF-PREMISES EXTENSION	WATS CIRCUITS	SECRETARIAL SERVICE	TYPE OF TEST	WHAT TO DO	HOW TO DO IT	REQUIREMENTS TO BE MET
X	X	X	X	X	X	X	X	1. DC tests on cable and/or open wire pairs.	Verify that the loop and insulation resistance requirements have been met.	Cable and Open Wire Testing — Voltmeter and Wheatstone Bridge Testing . . . . 660-807-500 Exchange Area Cables — Completion Tests . . . . 330-300-500 Insulation Resistance Tests — Paper Insulated Cables . . . 634-020-500	Normal requirements for type of facility.
X	X	X	X	X	X	X	X	2. Repeater tests and repeater gains (when provided).	Verify that required tests have been made and that each repeater gain has been set to its required value.	Type of telephone repeater — See Table C . 660-450-301	Where it is necessary to adjust repeater gains to compensate for office wiring losses, the maximum allowable deviation in repeater gain from that originally indicated on the circuit layout card shall not exceed ±1.0 dB. The adjusted value of repeater gain should be recorded on layout record card and other locally prepared records in the central office making the change.
X	X	X	X	X	X	X	X	3. Singing and echo return loss tests. (SRL and ERL) (When there is a 4-wire to 2-wire conversion).	Verify that repeater section and overall active singing point tests have been made on hybrid-type repeaters. Verify that singing point tests have been made on all 4-wire to 2-wire terminating arrangements.	SRL and ERL Tests . . 311-100-501	As shown on trunk or circuit layout record or as covered in reference sections.
	X	X	X	X	X	X	X	4. Single-frequency signaling circuits (when provided).	Where required—verify that "out-of-service" test have been made.	As specified in BSP on type of signaling systems. 1600-, 2000-, 2400-, 2600-Hz . . . 179-Division E-Type . . . 975-240-100 F-Type . . . 975-260-100	Requirements specified in BSP on type of signaling circuit.
X	X			X	X		X	5. Pulsing tests. (General)	Before any pulsing tests are attempted, all wiring, cross-connecting, and strapping should be completed.	See Section . . 333-121-500	See Section . . . 333-121-500

CHART A (Cont)

LOCAL PBX TRUNKS	PBX OFF-PREMISES STATION LINES	FOREIGN EXCHANGE LINES	PBX FOREIGN EXCHANGE TRUNKS	LONG DISTANCE TRUNKS	OFF-PREMISES EXTENSION	WATS CIRCUITS	SECRETARIAL SERVICE	TYPE OF TEST	WHAT TO DO	HOW TO DO IT	REQUIREMENTS TO BE MET
		X	X			X		6. Pulsing Tests (For FX and WATS circuits)	Before any pulsing tests are attempted, all wiring, cross-connecting, and strapping should be completed.	See Section . . . 333-125-500	See Section . . . 333-125-500
	X	X	X	X	X	X	X	7. Carrier telephone systems (when provided).	Verify that initial lineup and circuit order tests have been made.	Carrier Telephone Systems — See Table F . . 660-450-301	As covered in section for type of carrier systems.
	X	X	X	X	X	X	X	8. Carrier telephone systems — channel net gain (when provided).	Channel net gain at 1000 Hz should be accurately measured and correctly adjusted in both directions of transmission on all channels of carrier telephone systems.	Circuit Order or Trunk Order Tests—Testing Methods Channel Net Gain Measurements . 660-450-505	Adjust 1000-Hz level to exactly +7 dBm.
X	X	X	X	X	X	X	X	9. Overall 1000-Hz measurements.	Make 1000-Hz measurements in one direction of transmission on 2-wire trunks and in both directions on 4-wire or carrier trunks. Check both dialed-in and manual switchboard access (when provided). Make measurements to far-end 101-type test line (or equivalent).	See Section . . . 311-100-501	See Section . . . 311-100-501
X	X	X	X	X	X	X	X	10. Frequency Response	Make frequency response (sometimes referred to as slope, attenuation distortion, or frequency attenuation) measurements in both directions of transmission.	See Section . . . 311-100-501	See Section . . . 311-100-501
X	X	X	X	X	X	X	X	11. Message circuit noise test.	Make message circuit noise test.	See Section . . . 311-100-501	See Section . . . 311-100-501
X	X	X	X	X	X	X	X	12. Operation tests.	Make operation tests to verify that circuit meets service requirements.	Use methods specified in section listed for the particular type of PBX. See Alphabetical Index, Section 460-000-006.	Requirements specified in BSP on type of PBX.
X	X	X	X	X	X	X	X	13. Talking and listening.	Observe general transmission conditions such as quality, stability, volume, excessive noise or crosstalk, clipping, hits, excessive echo, and near singing.	Talking and listening observation is from testing location.	Satisfactory in all ways in judgment of tester.